

## CLAIMS

1. A method of producing super-micro powder of a pure metal by heating a starting material containing a metal chloride and reducing the resulting metal chloride steam with a hydrogen gas to produce super-micro powder of a pure metal, characterized in that an elemental metal constituting the metal chloride is mixed with the starting material containing the metal chloride.

2. A method of producing super-micro powder of a pure metal according to claim 1, wherein as the metal chloride is used a metal chloride having a valence larger among metal chlorides having two or more valence.

3. A method of producing super-micro powder of a pure metal according to claim 1 or 2, wherein the metal chloride is cupric chloride ( $\text{CuCl}_2$ ) or ferric chloride ( $\text{FeCl}_3$ ).

4. A method of producing super-micro powder of an alloy by heating a starting material containing a metal chloride and reducing the resulting metal chloride steam with hydrogen gas to form super-micro powder of an alloy, characterized in that a metal chloride is used as one to (number of all alloying components - 1) alloying components in the starting material and an elemental metal is used as the other alloying component.

5. A method of producing super-micro powder of an alloy according to claim 4, wherein the metal chloride is cupric chloride ( $\text{CuCl}_2$ ), cuprous chloride ( $\text{CuCl}$ ), ferric chloride ( $\text{FeCl}_3$ ), ferrous chloride ( $\text{FeCl}_2$ ), nickel chloride ( $\text{NiCl}_2$ ), cobalt chloride ( $\text{CoCl}_2$ ) or stannous chloride ( $\text{SnCl}_2$ ).

6. A method of producing super-micro powder of an alloy according to claim 4 or 5, wherein the elemental metal is copper (Cu), iron (Fe), nickel (Ni), cobalt (Co), silver (Ag), tungsten (W), molybdenum (Mo), niobium (Nb), tantalum (Ta), chromium (Cr), vanadium (V), germanium (Ge) or antimony (Sb).